REMARKS/ARGUMENTS

Claims 1, 4-6, 8-11 and 14-16 are active in the case.

The Examiner restricts Claims 12 and 17 by original presentation of claims, stating that previously added Claims 12 and 17 are directed towards a process for forming a fluorescent thin film, while original Claims 1-7 were directed to a fluorescent thin film. However, the Examiner has presented no arguments in support of restricting Claims 12 and 17 from the other claims, as is required in the M.P.E.P. and Claims 12 and 17 are specifically directed to the formation of a fluorescent thin film according to examined Claims 9 and 14, respectively. Therefore, the Examiner has not met the burden of supplying reasons to support the restriction requirement and the restriction requirement should be withdrawn and all claims examined together.

Further, if Claims 9 and 14 are ultimately held allowable, it is requested that Claims 12 and 17 be rejoined under M.P.E.P. § 821.04 and allowed, also.

Applicants again request that the Examiner consider the references in the Information Disclosure Statements filed April 17, 2003 and July 9, 2003, initial the references as having been considered on the Form PTO-1449 and return a signed copy to Applicants with the next Official Action.

Applicants again request withdrawal of the restriction requirement directed to Claim 7 and refer the Examiner to the arguments made in support of the withdrawal of the requirement in the response of April 17, 2003. Further, Claim 1 is ultimately held allowable, it is requested that Claim 7 be rejoined under M.P.E.P. § 821.04 and allowed, also.

Claims 1, 9 and 14 have had the phrase "matrix material" deleted and replaced with "rare earth sulfide" in order to indicate clearly that it is the rare sulfide matrix material that is

being referred to in the claims. Claim 1 has been further amended to add the phrase "for an EL panel" after the phrase "A fluorescent thin film". New Claim 18 has been added in which the Markush group of rare earth elements has had "La" deleted. No new matter has been added into the amended claims or new claims.

The objection to Claim 13 has been obviated by the cancellation of the claim.

The indication by the Examiner of allowable subject matter in Claims 4 and 8 is appreciated.

The rejection of Claims 9-11 and 14-16 under 35 U.S.C. § 103(a) as unpatentable over Harkonen et al is traversed.

The issues involved in the present rejection are the same as those that were argued in the response of April 17, 2003, which resulted in the removal of Harkonen et al as a reference.

Harkonen et al does not teach or suggest the limitations in present Claims 9 and 14 that the matrix material comprises a rare earth sulfide or a rare earth selenide and that the rare earth sulfide comprises at least one compound selected from the group consisting of lanthanum thioaluminate and neodymium thioaluminate, as in Claim 9, or lanthanum thioaluminate, neodymium thiogallate and yttrium thioinlate, as in Claim 14. Further, Harkonen et al does not teach or suggest that the rare earth element used as the light transmission center is different from the rare earth element of the matrix material.

Harkonen et al in column 4, lines 41-47 sets forth only compounds of Group II-VI compounds and alkali earth metal chalcogenides and does not set forth compounds of Group II-VI compounds, oxides, oxysulfides, or sulfides of rare earths or aluminates and gallates, such as lanthanum aluminate with europium or cerium and clearly does not disclose the thioaluminates, thiogallate or thioindate, discussed above. The portion of Harkonen et al

referred to in column 5, lines 25-64 merely lists in lines 39-50 a group of materials suitable as a matrix material, "Such suitable materials are, e.g., II-VI compounds like ZnO, ZnS or ZnSe and alkali earth metal chalcogenides like MgS, CaS, BaS or SrS. Also the oxides, oxysulfides or sulfides of rare earths are possible, such as e.g., Gd_2O_3, Y_2O_2S or La_2S_3 as well as aluminates and gallates $(MLn)AlO_x$ and $(MLn)GaO_x$ in which M = Zn, Ca, Sr or Ba and Ln = Y, La, Gd or Ce. The activator layer can be mainly composed of a halide MX_2 or LnX_3 or oxyhalide LnOX in which M = Ca, Sr, Ba or Zn and Ln = Y, La, Ce or Gd and X = F, Cl or Br." Thus, it is clear that there is no teaching or suggestion that the aluminates referred to in the above section are thioaluminates, because the aluminates referred to in the above section are stated as being only metal aluminates in which the metal is zinc, calcium, strontium or barium and does not include sulfur to form lanthanum thioaluminate, as in the present claims.

Therefore, the worker of ordinary skill in the art would not be directed to the use of lanthanum thioaluminate as the rare earth sulfide matrix material or a rare earth selenide as a matrix material, as recited in present Claims 9 and 14 . The claims distinguish over Harkonen et al.

The rejection of Claims 1, 5 and 6 under 35 U.S.C. § 102(b) as anticipated by JP 56-057877 and JP 56-082878 is traversed.

Claim 1 has been amended to recite that fluorescent film is "for an EL panel" and Claim 6 specifically recites the fluorescent thin film in an EL panel. Both of the Japanese references teach that the fluorescent material described therein is used in a flying-spot tube or an index tube, both of which are cathode ray tube (CRT) displays. In the flying-spot tube and the index tube, the light emission mechanism of the fluorescent material is cathode luminescence. The fluorescent film is formed on the cathode ray tube (CRT) by coating a

slurry of fluorescent powder on glass or another substrate. The fluorescent film in the cathode ray tube (CRT) is formed by the accumulation of particulate fluorescent material from the slurry of the fluorescent powder. The process of film formation in the Japanese references is completely different from the process of forming of the thin film of the present invention. The term "thin film", described in the present invention, refers to a film formed by evaporation, CVD, sputtering and other chemical and physical vapor deposition methods. Further, the EL panel in which the thin film of the present invention is used is typically formed having a sandwich structure like the structure of a condenser. The fluorescent thin film of the present invention is sandwiched between two insulating layers, and then between a pair of electrodes, since alternating electric current will be applied to the fluorescent thin film. This is in contrast to the fluorescent film in a cathode ray tube (CRT), which exists alone as a single layer.

The difference in the structure of the EL panel of the present invention and the cathode ray tube (CRT) display is caused by the difference in the electroluminescence (EL) light emitting mechanism of the present invention and the cathode luminescence (CL), which is the light emitting mechanism of the cathode ray tube (CRT) display. Because of these differences in the light emitting mechanisms, the fluorescent materials used in EL devices are not necessarily the same as those used in CL devices.

The present invention has solved problems associated with conventional fluorescent thin films in which an alkaline earth metal sulfide is used for the matrix material rather than the rare earth sulfide or selenide matrix material used in the present invention, which problems are described on page 6, lines 24-32 of the present specification. The problems solved by the present invention only arise when the fluorescent material is formed as a thin film in an EL panel and these problems do not occur, when fluorescent material is formed as

a film in a cathode ray tube (CRT) display, as described in the Japanese references. Thus, the fluorescent materials must be developed separately for each device in which the fluorescent material is used. This is the difficulty associated with the development of fluorescent material used in EL panels and cathode ray tubes (CRT) and this unpredictability is fundamental in the art of developing fluorescent material for use in these different devices.

Since the fluorescent thin film for an EL panel and the EL panel containing the fluorescent thin film of the present claims and the fluorescent film used in the cathode ray tube (CRT) displays of the Japanese references are so different in their application, light emitting mechanisms and film forming processes, the worker of ordinary skill in the art would not be directed to the technology of the Japanese references to arrive at a fluorescent thin film for an EL panel or an EL panel containing the fluorescent thin film of the present claims. For the above reasons the claims are not anticipated by the Japanese references.

It is submitted that Claims 1, 4-6, 8-11 and 14-16 are allowable and such action is respectfully requested.

Respectfully submitted,

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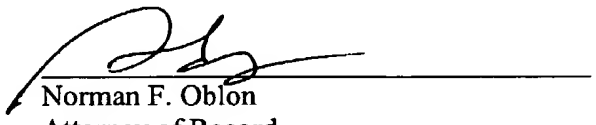

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